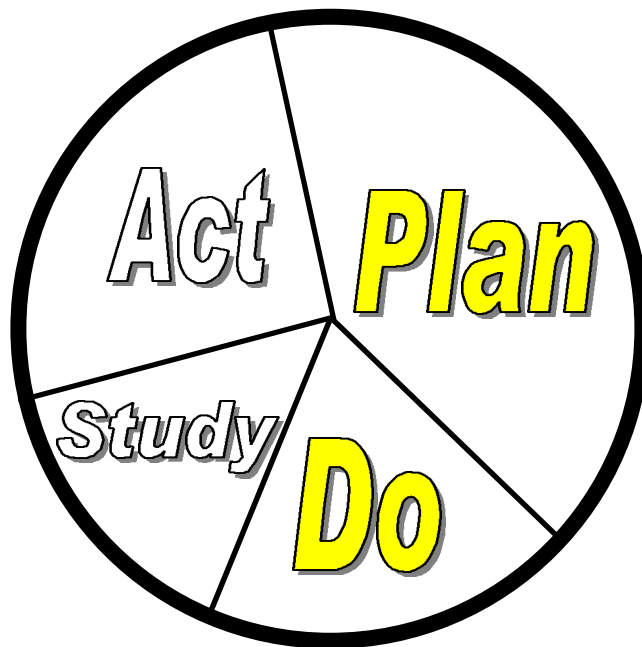


matc

Milwaukee Area Technical College

Strategic Planning Strategy Owner Training Guide

7 Step Improvement Method



The Review

The Review - "Executive Learnings"

- 1st Review: **February 22, 2000**
 - 1/2 hour per Key Strategy
 - Report on First 4 Steps of 7 Step
- Purpose:
 - Learn About Team Issues and Barriers
 - Help Team Accomplish Its Objectives
 - Develop Actions to Remove Barriers



The Review - "Executive Learnings"

- Overview of Review Form
- Final Presidential Review:
April 5, 2000
- Purpose:
 - 1 Review First 4 Steps
 - 2 Report on Steps 5, 6, 7



Review Team Feedback Form

	The extent to which...				
	Very Clear		Somewhat Clear		Not Clear
Step 1 – Defining The Problem					
The problem was clearly defined and communicated	5	4	3	2	1
Why this problem is important was given	5	4	3	2	1
Progress measures were defined (how you know they will be successful)	5	4	3	2	1
<i>Comments or suggestions on Step 1 – Defining The Problem:</i>					
Step 2 – Current Situation					
Graphics and/or data were used to illustrate the problem (flow chart, pareto diagram, etc.)	5	4	3	2	1
The problem was localized to show <i>what</i> it was, <i>where</i> it occurs, <i>when</i> it occurs, and <i>who</i> is involved.	5	4	3	2	1
The data narrowed the focus of the problem	5	4	3	2	1
<i>Comments or suggestions on Step 2– Current Situation:</i>					
Step 3 – Analyze Causes					
Potential causes to the problem were identified	5	4	3	2	1
Causes were verified, confirmed, or reasonable	5	4	3	2	1
<i>Comments or suggestions on Step 3 – Analyze Causes:</i>					
Step 4 – Develop and Try Solutions					
More than one solution was considered and evaluated	5	4	3	2	1
Solutions addressed the CAUSES	5	4	3	2	1
Solutions were planned and piloted	5	4	3	2	1
<i>Comments or suggestions on Step 4 – Develop and Try Solutions:</i>					

Review Team Feedback Form

Step 5 – Study The Results	Very Clear	Somewhat Clear	Not Clear		
Understand results from pilot	5	4	3	2	1
Completeness of pilot implementation plan	5	4	3	2	1
<i>Comments or suggestions on Step 5 – Study Results:</i>					
Step 6 – Standardize	Very Clear	Somewhat Clear	Not Clear		
Implemented throughout college	5	4	3	2	1
Documentation/training of new method	5	4	3	2	1
<i>Comments or suggestions on Step 6 - Standardize:</i>					
Step 7 – Future Plans	Very Clear	Somewhat Clear	Not Clear		
Suggestions for future improvements	5	4	3	2	1
Learning were summarized	5	4	3	2	1
Recognized and celebrate	5	4	3	2	1
<i>Comments or suggestions on Step 7 – Future Plans:</i>					

Summary

What does this team need to accomplish its objectives?

What key points did we learn today?

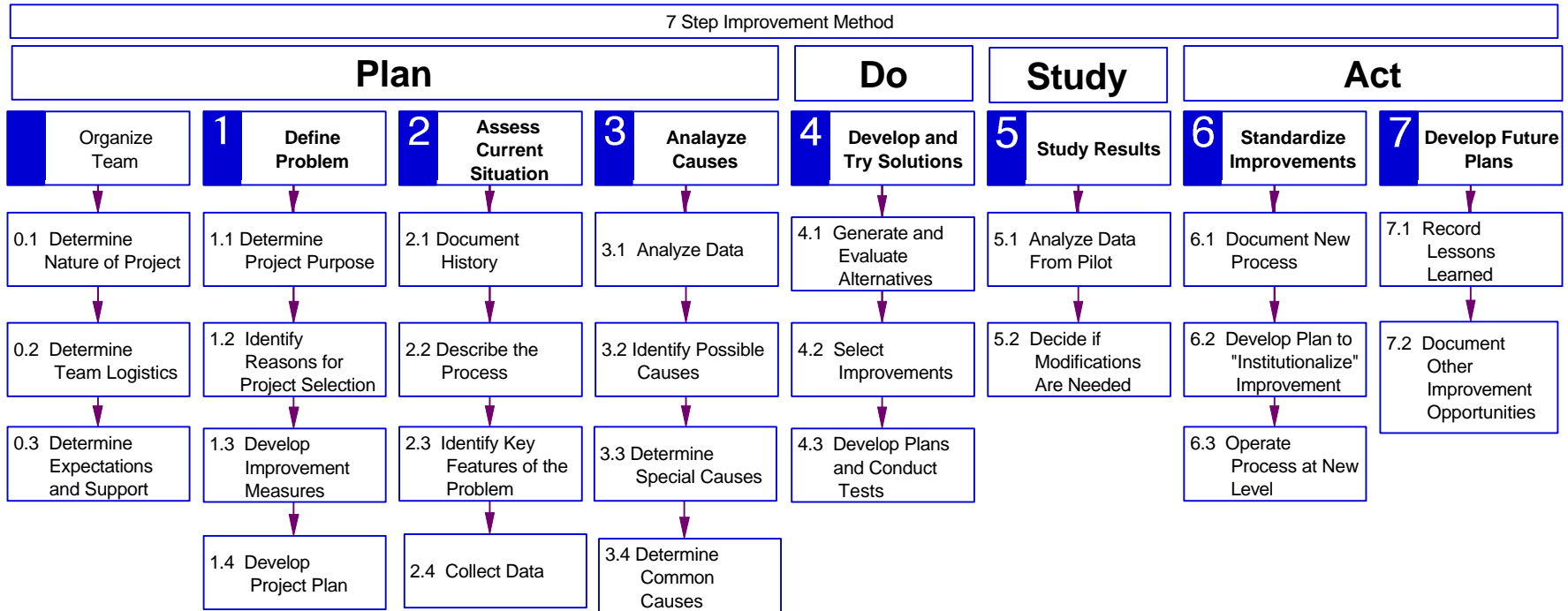
How can we improve this review process?

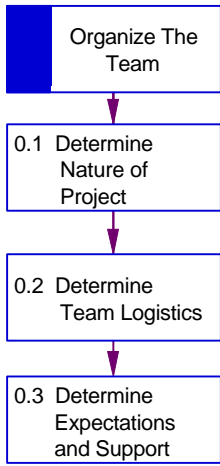
What key points should be carried over for the next review?

7- Step Improvement Method



Overview of 7 Step Improvement





0. Organize The Team

0.1 Determine The Nature of The Project

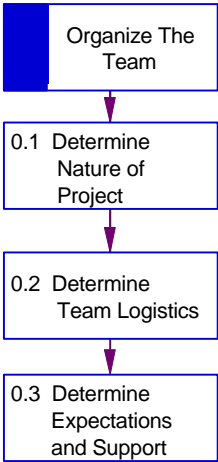
A. In general, what problems or issues does the organization face? What needs of customers, the organization, or the work area are not meeting your desired results?

0.1.A Individually, briefly describe the problem:

0.1.A As a group, come up with one description of the problem:

- B. How do you know? What data do you have to show needed improvement?
- C. What improvement project would have the biggest affect on other areas?

0.1.B&C Why is this important? Why was this team formed? Why THIS strategy?



0. Organize The Team

0.2 Determine Team Logistics

Roster of Key People	Phone	Fax/E-mail	Relationship to Problem/ Area of Study
Champion:			
Team Leader:			
Facilitator:			
Key Clients/Process Owners:			

Regular Meetings:

Time: From _____ to _____ Day: _____

Place: _____

Meetings With Champion:

Time: From _____ to _____ Day: _____

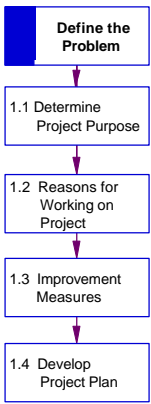
Time: From _____ to _____ Day: _____

Time: From _____ to _____ Day: _____

Time: From _____ to _____ Day: _____

Place: _____

Team Name: _____

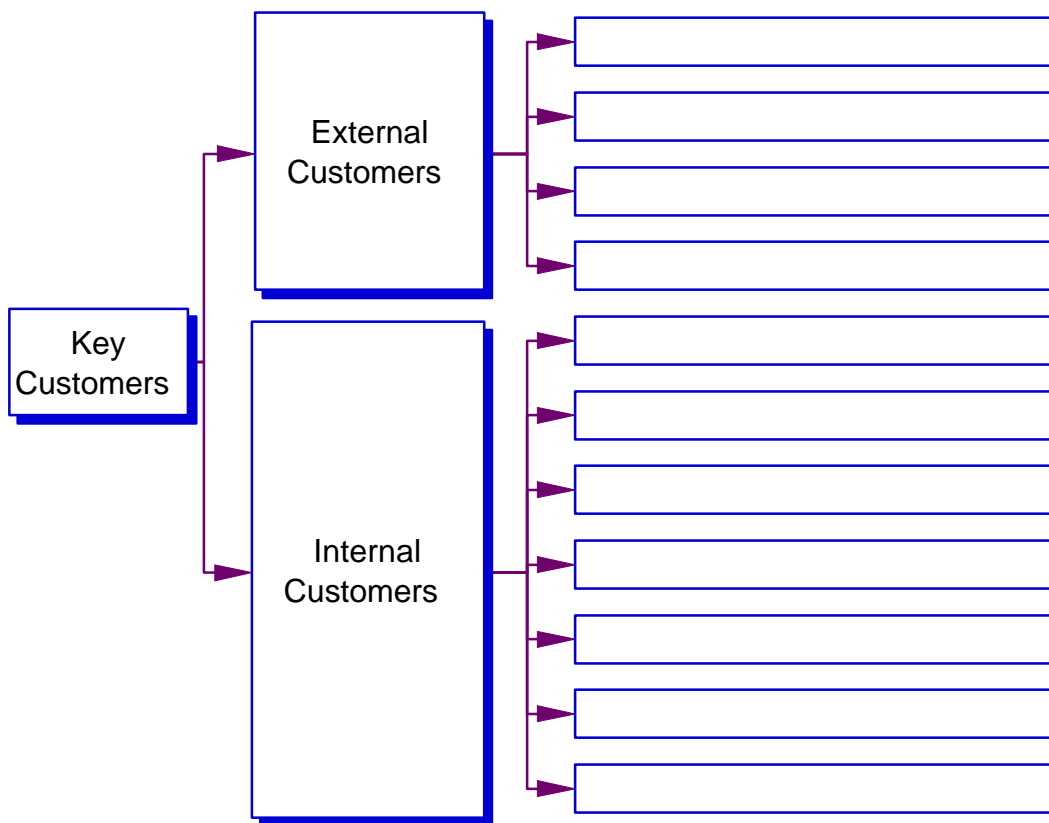


1. Define The Problem

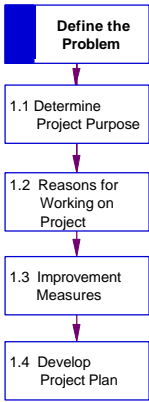
1.1 Determine Project Purpose

A. What is the project's purpose? Specifically, what process, problem, or "gap" will the team study?

1.1.A.1 As a group, identify who are the customers affected by the problem/issue?
 What processes are involved with this problem (internal customers)?



1.1.A.2 Circle one or two **key** customers and discuss why they are key.



1. Define The Problem

1.1 Determine the Project Purpose (Cont.)

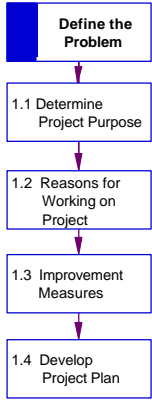
1.1.A.3 For one or both of the key customers circled, identify what this customer dislikes (related to the problem/issue).

After you have identified dislikes, translate them to specific, measurable, customer needs.

Key Customer: _____	
<i>Dislikes</i>	<i>Customer Needs</i>

Key Customer: _____	
<i>Dislikes</i>	<i>Customer Needs</i>

1.1.A.4 Circle the top one or two most important needs.



1. Define The Problem

1.1 Determine the Project Purpose (Cont.)

1.1.A.5 From the top one or two customer needs, write a single statement that describes the purpose of the project. A good statement has 1) the process to be improved, 2) key qualities that a customer desires, 3) is easily measured.

Examples:

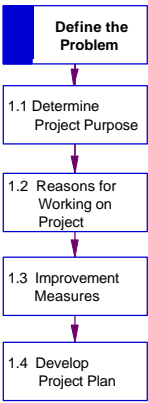
- To reduce customer waiting prior to ambulatory surgery (Hospital)
- To reduce the number of invoices past due
- To reduce the time it takes to finalize a contract
- To reduce the quantity of waste in the paper copying process
- To shorten the turn-around time of student financial application process
- To make supplies easier to find

Proposed Project Statement:

1.2 Identify Reasons for Project Selection

<p>A. What impact will closing this gap have on customers?</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><i>Hints:</i></p> <ul style="list-style-type: none"> • Will these customers notice if this problem is solved? Will they care? • What will happen if the gap is not closed? • How does solving this problem rank with other problems you could solve? • Who thinks this is important to solve (e.g. external customers, managers, employees)? </div>
<p>B. Why was this project selected over other possible projects?</p>
<p>C. What data were collected to verify the choice and focus of this project? If you have no data, what data should you collect to verify the need for improvement?</p>

1.2.A,B&C In one sentence, why is this team working on THIS project?



1. Define The Problem

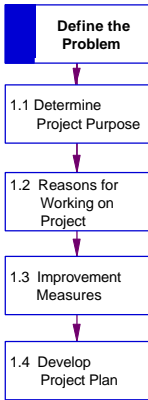
1.3 Develop Improvement Measures

A. What are the goals, desired outcomes, and benefits of this project?
B. What magnitude of improvement is the team expected to make?
C. What changes are expected to result from this project?

1.3.A,B,&C As a group, determine a list what measures will indicate progress. Then draw one or two sample graphs of the results you'd like to see as a result of your team's efforts.

Measures of Progress

1. Define The Problem



1.4 Develop Project Plan

A. What is your overall plan for this project?

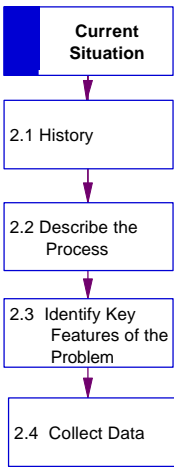
Hints:

- *Discuss with the team the questions in Step 0.2 and 0.3 – logistics, expectations, and available resources.*
- *What are the major tasks to complete this project?*

B. What barriers to improvement exist?

1.4.B As a group, determine what are the key barriers to making improvements that you might encounter.

<i>Barriers Against Improvement</i>	<i>Enablers Helping Improvement</i>
<i>Most Formidable Barrier:</i>	
<i>2nd Most Formidable Barrier:</i>	
<i>3rd Most Formidable Barrier:</i>	



2. Assess Current Situation

2.1 Document History

A. What is the history? When did problems first appear?

B. How did things get the way they are?

Hints:

- What problems in the past led to the current procedures and methods?
- What “fixes” in the past led to the current problem?

2.2 Describe the Process

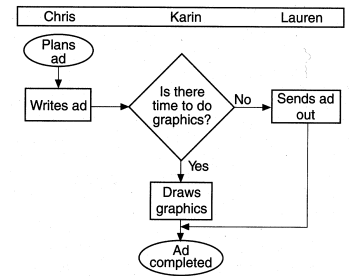
A. Who are the customers of the process? What are their expectations and needs?

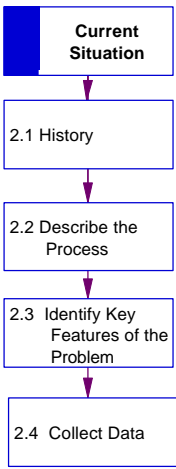
B. What is the purpose of the process (from the customers’ point of view)?

C. What are the outputs of the process (products and services)?

D. What are the inputs to the process (materials, equipment, supplies, information, people, etc.)?

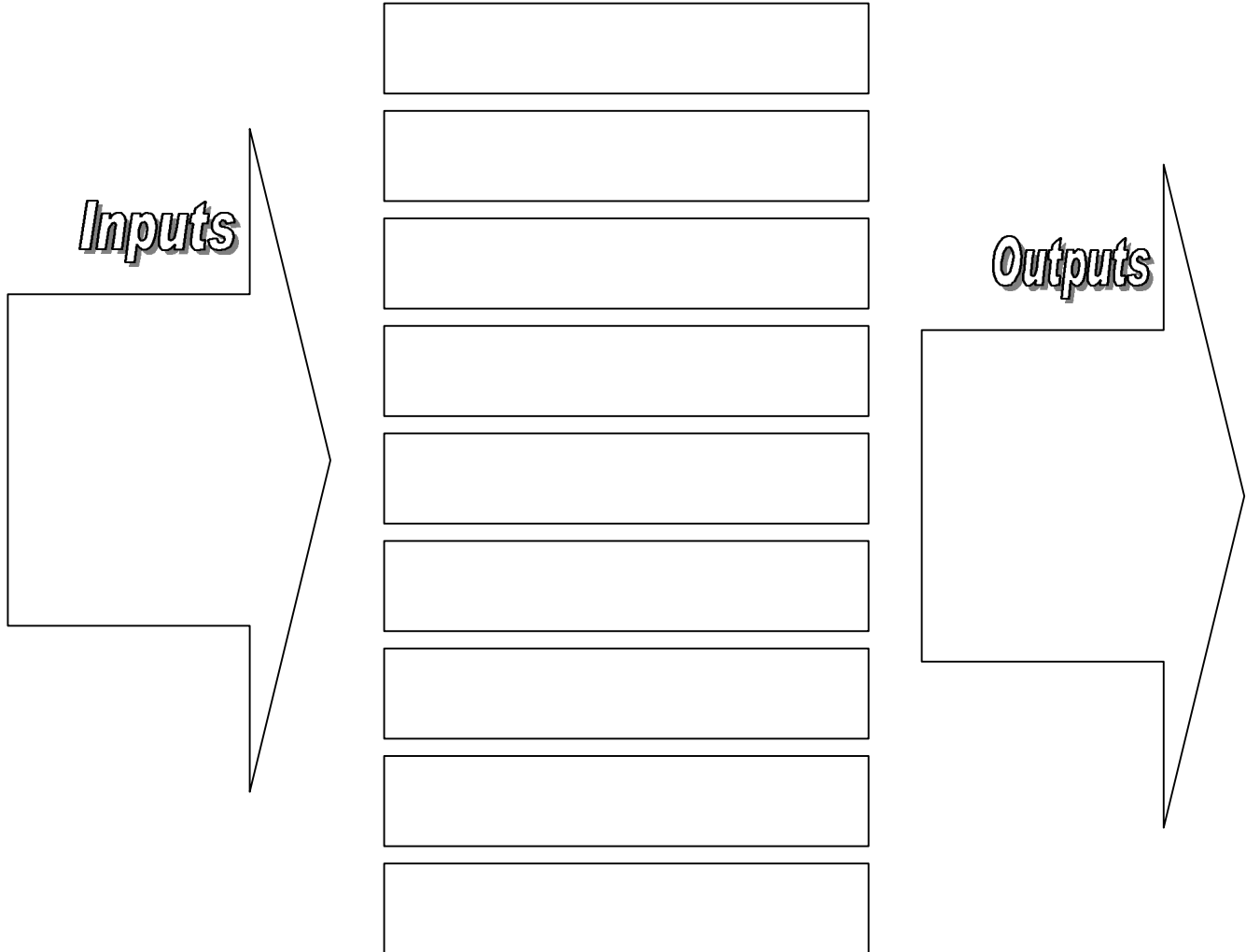
E. How does the process turn inputs into outputs? Draw or map it out.





2. Assess Current Situation

As a group, write the first step and the last step in the process identified previously. Then determine five to seven major steps in-between.



Circle the major steps where the problem occurs?

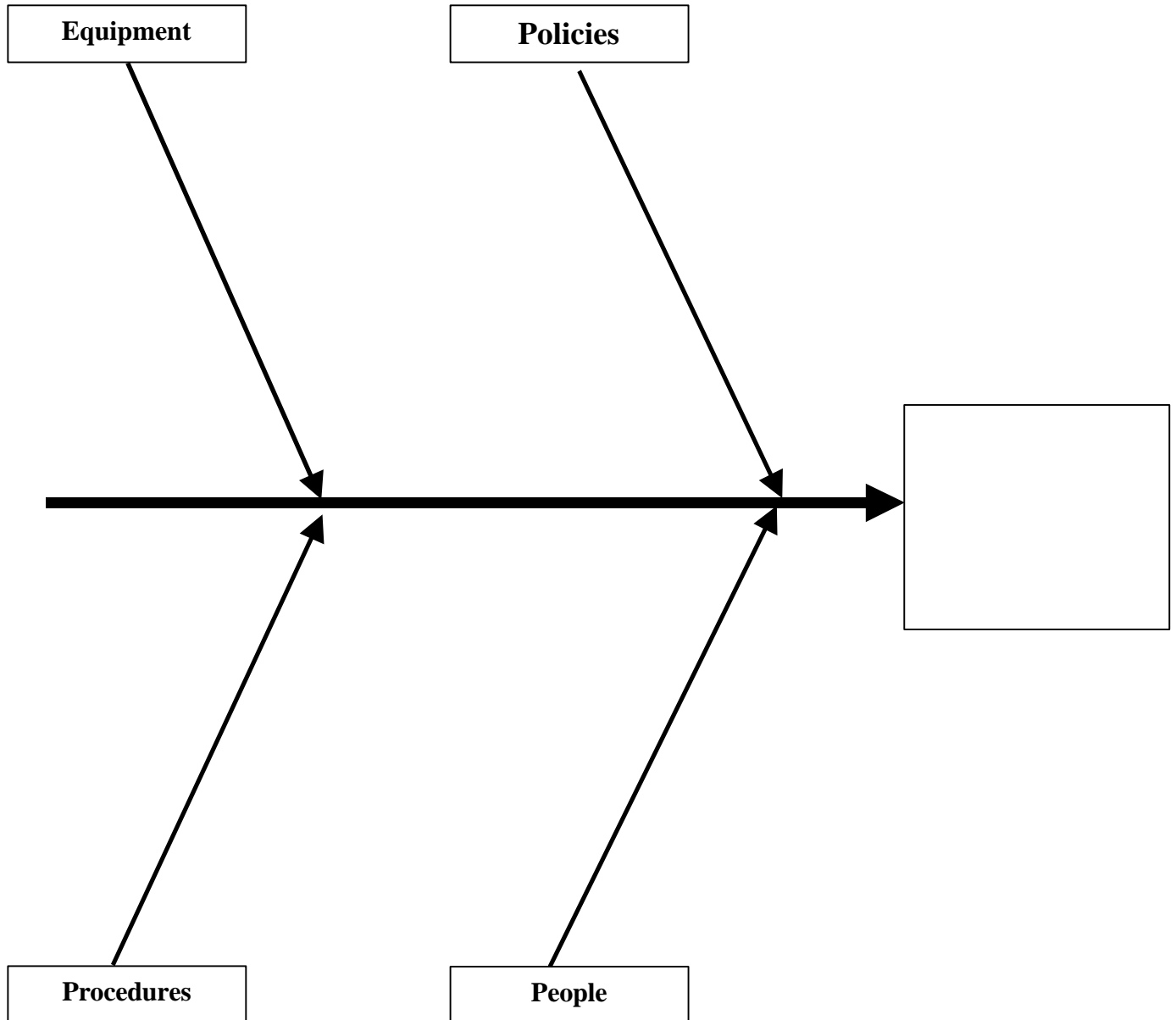
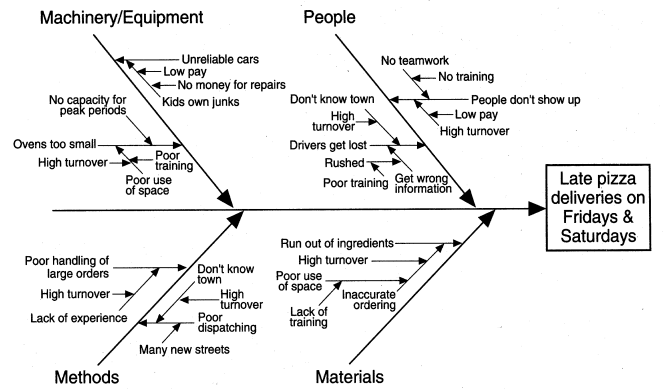
2. Assess Current Situation

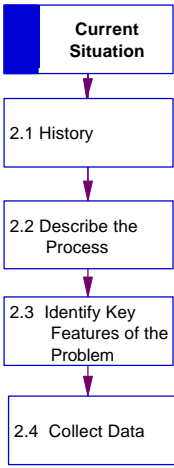
2.3 Identify Key Features of the Problem

- A. What happens when the problem appears? What are the symptoms?
- B. Where do problems appear? Where don't they appear?
- C. When do symptoms appear? When don't they?
- D. Who is involved? Who isn't?
- E. What are the problematic areas in the process?

Hints:

- *What equipment, functions, materials are involved?*
- *How are the results of the problem dealt with?*
- *At what point in the process are problems noticed?*
- *What patterns do you find for what, when, where, and who is involved when the problems do and do not occur?*





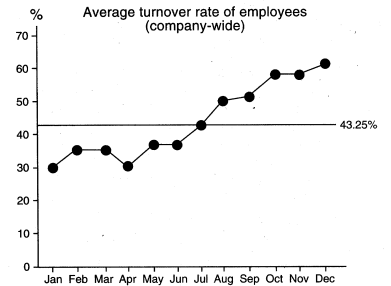
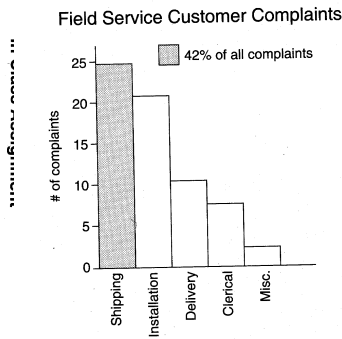
2. Assess Current Situation

2.4 Collect Data

A. Identify appropriate measures for who, what, when, where (see above) so that patterns can be detected.
B. How will you collect the data?
C. Where in the process will the data be collected?
D. How often (sample frequency) and how much data (sample size) will be collected?
E. Who will collect the data?

Below are some graphical examples of quality tools. Circle the ones you might use and draw two others that you would use to graphically describe the problem.

Mistakes	March			Total
	1	2	3	
Centering				8
Spelling				23
Punctuation				40
Missed paragraph				4
Wrong numbers				10
Wrong page numbers				4
Tables				13
Total	34	35	33	102



3. Analyze Causes

3.1 Analyze Data

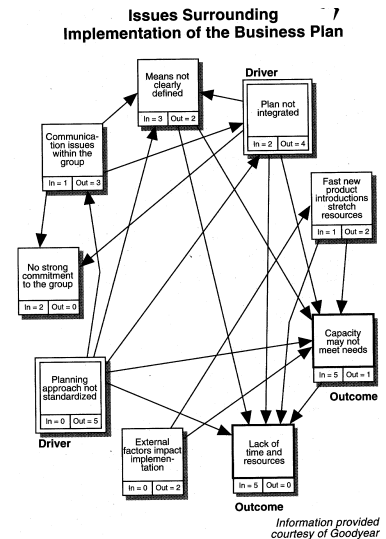
- A. Group the data (location, type, time, category) to discover the most significant problems on which to focus your improvement actions.

3.2 Identify Possible Causes

- A. What are the possible causes (as many as you can think of) for the most significant problems identified?

3.3 Determine Special Causes

- A. What causes are not part of the process all the time, are exceptions to the norm (e.g., a new employee that didn't know the standard procedures, etc.)?
- B. Verify special causes that were identified (effect is produced when the cause is there and the effect is not produced when the cause is not there).
- C. Address special causes (eliminate or minimize bad ones and standardize good ones if possible).



3.4 Determine Common Causes

- A. Which of the causes are common, part of the normal process?
- B. Verify common or root causes with data.
- C. Which causes might have the greatest impact on the improvement?

4. DEVELOP AND TRY SOLUTIONS

PURPOSE

- ✓ To identify possible improvement solutions.
- ✓ To test your improvement theories.

OUTCOMES

- ✓ Improvement theory statements
- ✓ Data on the tests

4.1 Generate and Evaluate Alternatives

- A. What are some potential solutions based on the prioritized customer needs and root causes of the problem?

*Brainstorming
Voting Technique*

Hint:

- *Input from people who know nothing about the system may be helpful.*

- B. Prioritize potential solutions using operationally-defined criteria (dollars, time, value to customer, feasibility, impact on root causes).

*Voting Technique
Matrix Diagram*

4.2 Select Improvements

- A. Select improvements to be made and write theory statements.

Brainstorming

- B. Identify conditions that will help or hurt in making the required changes to the system and actions to address these.

*Force-Field
Analysis*

4. DEVELOP AND TRY SOLUTIONS

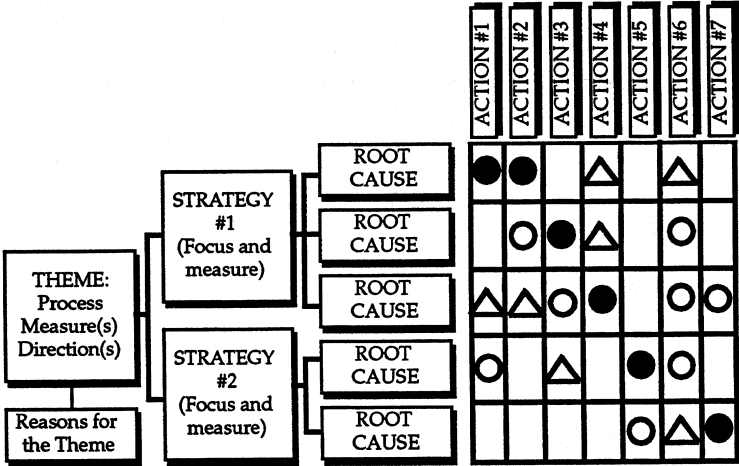
4.3 Develop Plans and Conduct Tests

A. Develop detailed plans for carrying out the actions required to improve the system (what, when, where, who, how, why). *Tree Diagram*

B. Conduct the tests.

C. Gather data on test results.

Same measurement tools to collect baseline data



5. STUDY RESULTS

PURPOSE

- ✓ To see if the improvement theories worked.

OUTCOMES

- ✓ Data-based decision to standardize or abandon actions

5.1 Analyze Data from Pilot

A. Analyze data gathered on root causes to determine if actions taken have improved the system or just changed it.

B. Identify qualitative results (effects on people in system, effects on other systems).

*Brainstorm
Survey, Interviews*

5.2 Decide if Modifications Are Needed

A. Decide what to leave or change for full-scale implementation.

Tree Diagram

6. STANDARDIZE IMPROVEMENTS

PURPOSE

- ✓ To fully implement actions taken to improve the system.
- ✓ To minimize the chance of going back to the pre-improvement state.

OUTCOMES

- ✓ System operating at the new level of performance.

6.1 Document New Process

- | | |
|---|---------------------------------|
| A. Document the new system. Create any new forms or job instructions as needed. | <i>Deployment
Flowchart</i> |
| B. Develop measures and methods to monitor and maintain improvements. Be sure to have provided information regarding whose responsible for checking the system, helping the operators, getting feedback, responding to problems, making incremental improvements. | <i>Sampling
Check Sheet</i> |
| C. Identify specifically any work yet to be done and resources needed. | <i>Brainstorming</i> |

6.2 Develop Plan to “Institutionalize” Improvement

- | | |
|--|----------------------|
| A. Identify required resources for training and implementation. | <i>Brainstorming</i> |
| B. Develop training and implementation plan for the new process. | <i>Tree Diagram</i> |

6.3 Operate Process at the New Level

7. DEVELOP FUTURE PLANS

PURPOSE

- ✓ To have the team's recommendations for continuous improvement.
- ✓ To complete documentation of the project.
- ✓ To report on the project.

OUTCOME

- ✓ Set of recommendations for continuous improvement
- ✓ Completed system improvement story
- ✓ Recognition for the team and process operators

7.1 Record Lessons Learned

- A. Report on inhibitors to the team's work (policies, practices, habits). *Brainstorming*
- B. Report on lessons learned. *Brainstorming*
- C. Complete the improvement story board, report findings to the organization, and celebrate *Story Boards*

7.2 Document Other Improvement Opportunities

- A. Identify additional opportunities for improving the process and for replicating the improvements in other parts of the organization. *Brainstorming*
- B. Develop a set of recommendations based on inhibitors, lessons learned, and additional opportunities (who should be involved, resources needed, expected benefits). *Brainstorming*

Problem vs. Solution

The first problem in problem solving is recognizing the difference between a problem and a solution. It sounds strange, but it is the most common problem encountered by quality facilitators.

Instructions: As a group, look through the list below and:

1. Determine if the statement is a problem or solution.
2. Place each "problem" in an oval below.
3. Place solutions in the boxes across from the problems to which they apply.
4. Add your own solutions in the remaining boxes.

Statements

- | | |
|---|--|
| 1. "Hire more people" | 2. "Employees are not involved in department decisions" |
| 3. "We need teams" | 4. "Schedule weekly meetings" |
| 5. "Communication training for foremen" | 6. "Train supervisors in getting employees more involved in problem solving" |
| 7. "Shop employees are not informed" | 8. "We have high turnover" |
| 9. "Increase health benefits" | |

Problem or Issue

*Is typically expressed
in terms of WHAT.*

Three empty ovals are arranged vertically, intended for students to place the identified problems or issues from the list above.

Solutions

*Is normally expressed
in terms of HOW.*

A grid of boxes for identifying solutions. It consists of three rows, each with two boxes. The first row has two boxes, the second row has two boxes, and the third row has two boxes. Lines connect the ovals on the left to the boxes on the right, indicating that solutions should be placed across from the problems to which they apply.

Three Keys To Problem Solving

Since everything can be improved, there are three keys to effective problem solving:

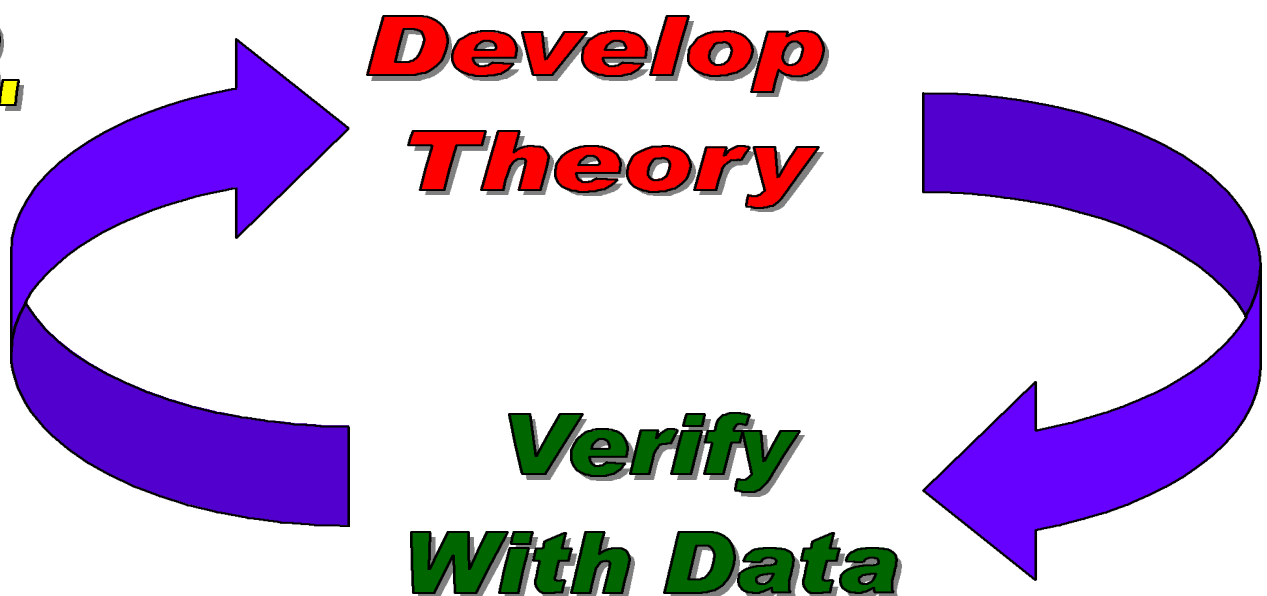
1. Work On The **RIGHT** Problem

This is **CRITICAL**. Most organizations and group do not spend enough time defining the problem they are working on. Look in tools section for ways to define the problem.

2. Focus Your Efforts

All organizations are short on time and resources, so the best way to attack a problem is to work on those problems that will give you the biggest bang for the buck. Use the Pareto Principle whenever possible.

3.



Focus Your Efforts Pareto Principle

The Pareto Principle is a powerful tool to help a group focus their efforts. It allows you to concentrate on the critical few and separates you from the trivial many.

Pareto Principle:

**80% of the trouble comes
from 20% of the problems**

The Pareto Principle applies to many different situations. For example:

- 80% of our sales are from 20% of our customers
- 80% of our sales are from 20% of our products offered
- 80% of our defective parts come from 20% of our common problems
- 80% of manufacturing problems come from 20% of our processes
- 80% of our attendance problems are from 20% of our employees

Assignment:

Develop a Pareto statement for your organization or home. Then verify it with data. Draw a Pareto Diagram for your findings and be prepared to share it with the rest of the class. For help, see Check Sheets and Pareto Diagrams in the Tools section.

Pareto Statement:
